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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/763,090	01/22/2004	Janet Dmitrovich	AUS920030741US1	6062

40412 7590 12/27/2006

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EXAMINER	
TSUI, DANIEL	
ART UNIT	PAPER NUMBER
2185	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/763,090	DMITROVICH ET AL.	
	Examiner	Art Unit	
	Daniel Tsui	2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/22/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on January 22, 2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Oath/Declaration

2. The declaration filed on January 22, 2004 has been considered and accepted by the examiner.

Drawings

3. The drawings filed on January 22, 2004 have been considered and accepted by the examiner.

Specification

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

5. The abstract has been considered and accepted by the examiner.

6. The specification has been considered and accepted by the examiner.

Claim Rejections - 35 USC § 101

7. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 14-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to a computer program product stored on a computer operable media. On page 29 of the specification the applicant has indicated that computer operable media includes signals for downloading via the Internet or other network. As such, the claims are drawn to a form of energy which is not one of the four categories of invention and therefore the claim is not statutory. Energy is not a series of steps or acts and thus is not a process. Energy is not a physical article or object and as such is not a machine or a manufacture. Energy is not a combination of substances and therefore not a composition of matter.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1, 6-7, 14, 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cocke (US 3,800,291) in view of applicant's admitted prior art.

As per claims 1 and 14, Cocke teaches a method and computer program product that comprises:

mapping instructions stored on a nonvolatile storage device (main storage 97, see figure 1) to an address space located in system memory (instruction memory 10; and address translation mechanism 52, see column 4, lines 56-57);

storing mapping data resulting from the mapping in a page map (address translation mechanism includes address translation tables, see column 9, lines 27-30).

Cocke teaches branching to targets not in the memory to cause page faults that will load in a page from the storage device so the instructions can be executed (see column 2, lines 22-25). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to branch to an address within the address space in order to start execution of a set of instructions. Upon discovering that the page is not in the instruction memory, the system would issue a page fault to load in the instructions from the system memory so they can be executed. Cocke does not teach the instructions being pages of a Java executable image.

The applicant's admitted prior art teaches read-only data of a Java executable file to be the bytecodes (see page 2, lines 25-26) stored on the nonvolatile storage. It would have been obvious at the time the invention was made to use the instruction memory paging method as taught by Cocke for the Java executable bytecodes. In this way, Java programs can be executed quickly by having necessary instructions accessed from a memory.

As per claims 6 and 19, Cocke teaches the address translation mechanism having a table that correlates page addresses (virtual page numbers) with locations in the nonvolatile storage (physical addresses; see column 6, lines 18-24). Therefore it

would have been obvious at the time the invention was made for the method to include the steps of writing one or more page addresses to the page map and writing a nonvolatile storage location corresponding to each of the written page addresses to the page map so that the address translation table can be formed.

As per claims 7 and 20, it would have been obvious at the time the invention was made to initialize a set of instructions by branching to a first address of that set of instructions so the instructions can be accessed and executed by the system. Therefore it would have been obvious at the time the invention was made to a person of ordinary skill in the art to have the method include the step of initializing the Java executable image by branching to the address, wherein the address is the initial address of the Java executable image. This would allow the system to access the first bytecode of the Java executable image so that the Java executable image can be executed.

10. Claims 2, 3, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cocke in view of applicant's admitted prior art and further in view of Kish (US 4,868,738).

As per claims 2 and 15, Cocke teaches a method and computer program product for loading pages of a Java executable image, as applied to claims 1 and 14 above. Cocke does not teach selecting, based upon a system paging policy, one or more of the loaded pages and discarding the loaded pages. Kish teaches using a status bit to select a page that is expendable and discarding that page if it represents a read-only

portion of an application (see column 16, lines 59-67). Therefore it would have been obvious at the time the invention was made to a person of ordinary skill in the art to select a page from one of the loaded pages and to discard it in order to free up space in the memory for new pages. Since the discarded page is for read-only data, there is nothing that can be actually written back to the storage device.

As per claims 3 and 16, if the instructions on the discarded page included a branch instruction that was executed, it would have been obvious for the branch instruction to target an address not yet in the memory, causing a page fault. Therefore it would have been obvious at the time the invention was made to a person of ordinary skill in the art to retrieve one ore more pages from the Java executable image stored on the nonvolatile storage device and to load the retrieved page into the address space so that the instruction of the branch target address can be found in memory and executed.

11. Claims 4, 5, 8, 11-13, 17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cocke in view of applicant's admitted prior art and further in view of Katsura (US 4,446,517).

As per claims 4, and 17, Cocke teaches a method and computer program product for loading pages of a Java executable image, as applied to claims 1 and 14 above. It also would have been obvious that the method taught by Cocke includes the step of receiving a request to load the Java executable images before performing the method. Cocke does not teach allocating the address space in the system memory prior to branching. Katsura teaches a system that allocates address space for program

instructions before a branching so that there will be memory space available for the branched instructions (see column 6, lines 45-48). Therefore it would have been obvious at the time the invention was made to a person of ordinary skill in the art to allocate address space for the Java executable image prior to the branching so that space will be available for the image after the branching.

As per claims 5, and 18, Cocke teaches a system for paging memory. A paging memory system allows a larger size of data to use a smaller allocation of system memory. Therefore it would have been obvious at the time the invention was made to a person of ordinary skill in the art to have the size of the address space allocated by the method to be less than the size of the Java executable image stored on the nonvolatile storage device since the system uses paging memory. This would allow a Java executable image of a larger size to use less system memory space.

As per claim 8, Cocke teaches an information handling system comprising one or more processors (the system is part of a computer system that would have a processor), a memory accessible by the processors (instruction memory 10, see figure 1), and a nonvolatile storage device accessible by the processors storing instructions (main storage 97, see figure 1). The combination of references teach the remaining limitations as applied to claims 1 and 4.

Claims 11, 12, and 13 are dependent from claim 8 and have the same limitations as claims 5, 6, and 7. They are rejected by the combination of references as applied in the rejections above.

12. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cocke in view of applicant's admitted prior art and Katsura and further in view of Kish.

Claims 9 and 10 are dependent from claim 8 and have the same limitations as claims 2 and 3. They are rejected by the combination of references as applied in the rejections above.

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kelly (US 5,832,205) teaches a memory controller for a microprocessor for detecting a failure of a speculation on the physical nature of a component being addressed.

Henry (US 6,990,548) teaches a microprocessor, apparatus, and method for selective prefetch.

Peinado (US PGPub 2004/0221126) teaches implementation of memory access control using optimizers.

DeWitt JR. (US PGPub 2003/0135789) teaches a method and system for instruction tracing with enhanced interrupt avoidance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Tsui whose telephone number is (571)270-1022. The examiner can normally be reached on M through F, 8:00-4:30 (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sanjiv Shah can be reached on (571)272-4098. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DT

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